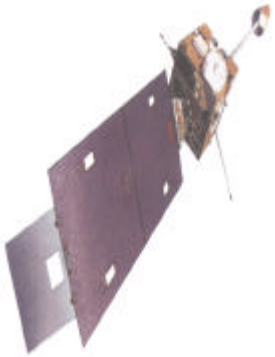
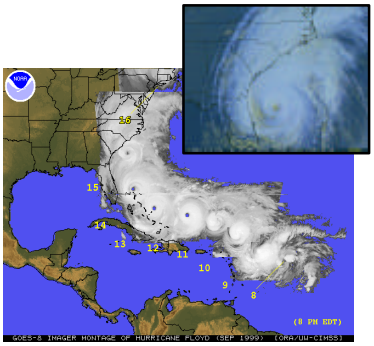
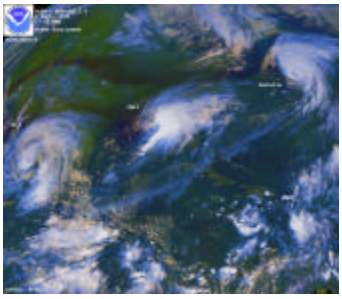
National Environmental Satellite, Data, and Information Service
Geostationary Operational Environmental Satellite System



NOAA GOES I-M satellites provide critical weather coverage of the western hemisphere



GOES-8 images of Hurricane Floyd show the track of the storm beginning Sept. 8 through Sept. 16, 1999



This GOES image shows three hurricanes off the U.S. Atlantic coast in September 1998.

The National Requirement: The Nation needs highly accurate, timely information on storm movements over North America in order to better predict severe weather events such as hurricane landfall, or to indicate where severe thunderstorms might develop. Knowledge of where such storms might develop helps forecasters to better predict flooding, providing ample time to warn residents of severe conditions.

NOAA's Response: NOAA maintains a system of two environmental satellites in geostationary orbit to provide data for short-term weather warnings and forecasts. These GOES satellites are 22,600 miles above the equator in orbits that make them appear to remain stationary over one place. Two GOES satellites remain operational at all times, one over the eastern United States and the Atlantic Ocean and the other over the western United States and the Pacific Ocean. An additional satellite serves as an on-orbit spare for use in the event of a failure.

GOES provides images of the entire United States every 15 minutes. GOES images of clouds are a mainstay of television weather forecasts, allowing nearly every citizen access to GOES data in this form. All National Weather Service Forecast Offices use these images to serve the public, industry, and Federal, state, and local governments with local weather forecasts and warnings of severe weather events. NOAA can acquire GOES images as frequently as every minute to monitor severe weather development and track its movement. NOAA also uses GOES temperature and water vapor data in powerful numerical prediction models to form the basis of local and regional forecasts. In addition, these sentinels provide critical information on disasters, such as floods, fires and volcanic eruptions.

Additionally, NOAA is equipping GOES satellites with Search and Rescue transponders for the detection and relay of distress signals from downed aircraft, imperiled ships, and other sources. These data complement data from our Polar-orbiting Satellite System and provide critical in support of a search and rescue system that has aided in the rescue of more than 11,000 people

Financing: The FY 2002 President's Budget includes $293.3 million for GOES systems. This requests provides an increase of $3.1 million over the FY 2001 enacted level, and supports the completion and launch of the GOES-M environmental satellite as well as continued manufacture of satellites, launch vehicles, and ground systems for the next generation GOES-N series of environmental satellites. The request also includes a small amount of funding for the development of the future generation GOES satellites, the GOES-R series. Funding also continues the development of the next generation advanced sounder and imager instruments, which will fly on the GOES-R series of satellites.